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A FIELD-EXPERIMENTAL STUDY OF THE FUNCTIONS OF EDUCATIONAL TELEVISION FOR ITS AUDIENCES, WITH SPECIAL REFERENCE TO THE POTENTIAL ROLE OF CHILDREN IN STIMULATING FAMILY USE OF THIS MEDIUM.

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DESCRIPTORS- *FAMILY INVOLVEMENT, *EDUCATIONAL TELEVISION, *CHILDREN, *TELEVISION VIEWING, *DISCUSSION GROUPS, GRADE 10,

THE POTENTIAL ROLE OF CHILDREN IN STIMULATING FAMILY USE OF EDUCATIONAL TELEVISION DURING EVENING HOURS WAS STUDIED. FOUR EXPERIMENTAL CONDITIONS WERE CREATED AMONG TENTH-GRADE SOCIAL STUDIES TEACHERS AND THEIR CLASSES--(1) A DISCUSSION PROCEDURE WAS USED TO STIMULATE VIEWING OF A PUBLIC AFFAIRS SERIES ON THE AREA'S EDUCATIONAL TELEVISION STATION, (2) STUDENTS RECEIVED BROCHURES THROUGH THE MAIL, PUBLICIZING THE PROGRAMS, (3) SITUATION ONE AND TWO COMBINED, AND (4) A CONTROL SITUATION INVOLVING NEITHER STIMULUS. DEPENDENT VARIABLES WERE THE EDUCATIONAL TELEVISION HABITS OF CHILDREN AND THEIR PARENTS DURING EVENING HOURS. THE DISCUSSION METHOD WAS SUCCESSFUL IN INCREASING THE NUMBER OF EDUCATIONAL TELEVISION VIEWERS AMONG CHILDREN, BUT THE INCREASE PERSISTED ONLY WHILE THE EXPERIMENT WAS IN PROGRESS. PROGRAM INTEREST DID NOT GENERALIZE TO OTHER EDUCATIONAL TELEVISION BROADCASTS. CONTRARY TO EXPECTATIONS, PARENTS DID NOT VIEW THE PROGRAM WITH THE CHILDREN. (TC)

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1. INTRODUCTORY NOTE

This is the third of three reports submitted in connection with the University of Minnesota School of Journalism's field experimental study of the potential role of children in stimulating family use of educational television during evening hours.

The first report (October, 1962) covered the results of a preliminary survey among tenth-grade Minneapolis high school students. This yielded information about youngsters' TV viewing behavior in preparation for the field experiment itself. A second section of the same report provided an extensive review of research literature pertinent to the subject studied.

In a report dated September, 1963, we described the procedures we had followed in conducting the field experiment, and in the present report we present the results of the experiment.

Most of the content which follows is adapted from material prepared by Peter Clarke, who assumed major responsibility for directing the study and analyzing the data. Dr. Clarke, now an assistant professor of journalism at the University of Washington, undoubtedly will publish materials growing out of his involvement in this study. Particularly noteworthy are his contribution and development of the conceptual material dealing with "social rewards" that might be provided experimentally in the classroom as a stimulus to educational television viewing in the home.

Beginning on page 2 ("Background"), we present some of the conceptual and theoretical content underlying the study. Then, on page 8 ("Method"), we move into a description of the procedures used in recruiting teachers for the experiment and of the ways in which they were assigned to the four "treatment" conditions. The "Findings" section (page 11 onward) tells of our successes and failures in attempting to encourage educational television viewing, and a final section (page 24) provides a summary review of the field experiment, with some attention to implications of the findings.

2. BACKGROUND

Despite many promising aspects of educational television (EdTV), audience studies have revealed that this new medium often appeals mainly to those who may need it least—that is, to people who already are relatively well educated.[1] This finding has proved disappointing to those interested in promoting public affairs education in the interest of a better informed citizenry.

Of course, EdTV also serves as a more formal teaching mechanism: school children are exposed daily to lessons in geography, languages, and a variety of other subjects. Less clear, though, is the impact of evening educational TV broadcasts on youngsters of school age. The experiment reported here was an effort to discover the extent to which children could be attracted to some of this evening programming. We were particularly interested in learning whether the youngsters might serve as agents of change who might bring about viewing by their parents, too.

The political and social implications of these interests seem important in light of Converse's data concerning media use and adult political behavior.[2] He found that use of the mass media for public affairs information follows a Guttman scale pattern: magazines are the "hardest" item and the electronic media the "easiest." A substantial number of Converse's respondents (especially the less educated) follow political events, if at all, only through the spoken media. Paradoxically, these individuals, with their meager store of information, are most likely to switch their political allegiances during elections. As a consequence, these persons probably affect political processes out of proportion to their numbers.

The attention of various groups has been focussed for years on increasing the commercial broadcast time allotted to news and public affairs topics. Yet

little is known about whether audience exposure to this "reality content" can be increased or about the social-structural variables that might mediate attempts to induce changes in audience behavior.

Understandably, social scientists concerned with relationships between media attention and political behavior have limited their research to adult samples. However, an increasing number of studies have explored the development of political attitudes and beliefs among children of various age levels.[3] In addition, some descriptive data have been reported concerning the development of youngsters' mass media tastes.[4]

These findings indicate (1) that political predispositions, including attitudes, sense of involvement, and party preference develop as early as at age 13 among many children, and (2) that patterns of mass media use show a surprisingly adult quality in the pre-high school years.[5]

Thus, adult political and media behavior seem to become entrenched during pre-adult years. It is important to learn, then, whether a taste for "delayed-reward" media content can be encouraged among children.[6] If enduring changes can be made in youngsters' media behavior, and if these changes are compatible with adult roles, then ultimately one might expect political behavior (including information level) to be influenced.

Of course, commercial TV channels present a variety of public affairs programming of educational value. However, this experiment tested methods for increasing exposure to an EdTV program. It was built around the Minneapolis-St. Paul EdTV station's broadcast called "World Affairs," a program specifically intended for high school children.[7] Of interest, too, was whether increased exposure to the "World Affairs" program would generalize to viewing other EdTV broadcasts.

But youngsters were not the only viewers of concern. The social context of family TV viewing makes it clear that persistent changes in children's audience behavior are more likely if parents can be attracted to "reality" content, too.[8]

In fact, an examination of the social rewards of TV viewing sheds light on the theoretical propositions underlying this experiment. The data cited here were gathered from parents and their tenth-grade children who participated in the field experiment described in the section beginning on page 8.

Here is what parents told interviewers about their most recent evening television watching. About one-fifth of these mothers and fathers said that a "reality" content program had been <u>their favorite</u> last night; public affairs and news programs were the most frequently mentioned, although a few individuals reported watching serious drama and EdTV.

Whether or not a reality program was viewed, though, the family audience composition was about the same; about 6 out of 10 parents said they had watched with their children--no matter whether the program was a western, sports event, situation comedy, or news program. By this account, then, children do not leave the room when public affairs programs come on the television screen.

Is this because parents require their tenth-grade children to watch "what's good for them?" Not if responses to another question are any indication. When parents were asked whose idea it had been to view the program they had liked best last night, about one-fourth replied it had been a child's recommendation--even among parents who had indicated a reality program. This preliminary finding was of particular interest to us in view of the study's concern with the extent to which children might lead their parents to watch EdTV programs in the evening.

So far, there is no evidence to suggest substantial audience shifts during the family's evening TV watching, nor any indication that various family members

exercise opinion leadership over different kinds of programs. However, different types of programs presumably possess varying potentials for subsequent social interaction.

Parents were asked if they had discussed their favorite program, and if so, with whom. Among the reality-watchers, 50% reported subsequent interaction, while among those who viewed fantasy offerings (adventure, light entertainment, sports), only 20% said they had talked with anyone about their program.[9]

Furthermore, children were mentioned equally often as discussion partners by both groups of parents--reality-watchers and fantasy-watchers.

Thus, two additional findings emerge: (1) social rewards via interaction are more common for reality content (hardly surprising), and (2) children participate in these rewards.

The social rewards of TV viewing can also be examined from the children's standpoint. Youngsters were asked how recently they had talked about television programs with their parents and with friends their own age, and how often they usually did this sort of thing. On both these recency and frequency dimensions, interaction about TV with peers proved far more common than with parents.

However, the questionnaire went one step further. Youngsters were asked to describe the program they had talked about most recently with each group--parents and other children. When the tenth-graders were recalling interaction with peers, only 4% reported the topic had been a reality program; with parents the proportion rose to 18%.[10] This is evidence of adult social reinforcement of reality viewing--at least, among some families.

It might be assumed that children often find rewards in interaction with adult, authority figures. If one avenue of access to these social rewards is exposure to

reality programs, efforts to link social rewards to reality viewing should increase the probability of exposure.

A useful experimental treatment might be to work with a group of parents and induce them to tune in EdTV programs and discuss them with their tenth-grade children. Unfortunately, although such an experimental design might capitalize on existing communication links between children and their parents, there would be considerable between-parent variability in the success with which they exercised this kind of child-centered media behavior.

This fact leads to an alternative query: Are there other adult, authority figures experiencing frequent social contact with children who (1) are relatively skillful in structuring interpersonal relationships, and (2) are limited in number and readily identifiable, so that it would be possible to manipulate their contacts with children experimentally? School teachers fit this definition on both counts.

Teachers control to some extent segments of each child's "schedule" of opportunities for social rewards. Presumably teachers are able to manage class activities so that permission to speak and be listened to is rewarding and so that participation in class discussions provides gratifications.

The primary method tested here for increasing exposure to evening EdTV was to organize class discussions around topics covered by the weekly "World Affairs" program. These discussions were structured in order to maximize the social rewards available to children for viewing the broadcast. The procedure was as follows:

(a) Fourteen volunteer teachers were asked to organize class discussions each Monday for four weeks, during which they introduced current events topics (for example, the Alliance for Progress) which were to be featured on the "World Affairs" program that evening. Study materials for classroom use were developed by the research project staff.

(b) Teachers advised students that a class discussion would follow on Tuesday, during which the tenth-graders would be encouraged to contribute their ideas. The "World Affairs" program was recommended as a source of ideas for discussion, but it was not assigned. Students were told they would not be tested on any of the current events material, and teachers were asked not to criticize or punish failure to watch the EdTV program.

(c) The class discussions were conducted on Tuesday, and the goal of encouraging maximum student participation was stressed with teachers.[11]

It was theorized that criticizing students overtly for not viewing Channel 2 would introduce constraints and emotional antagonisms that would block the desired response. On the other hand, being unable to participate in class discussions (because of lack of information supplied by the program) would be punishing only for students motivated to take part and gain social recognition. If such motives are relatively enduring, one would expect cues from this latter, more subtle mode of punishment to be present when the next opportunity arose to view the "World Affairs" program.

In addition, it was expected that changes in EdTV viewing would be difficult to induce if viewing were perceived by family members as an experience useful only in satisfying school requirements, since under this condition parents would not be likely to join the audience. When parents <u>can</u> be brought into the audience, more opportunities are available for social reinforcement of the viewing of serious program content.

A second technique aimed at increasing the EdTV audience was utilized, as well. Direct-mail brochures were sent to some of the children at home, advertising forthcoming "World Affairs" broadcasts. There was no theoretical reason to hypothesize any consequential effects from this treatment, since the mail campaign was not designed to arouse social interaction about the program or to suggest other social rewards. It was thought, however, that program information received at home might interact with inter-personal discussions at school to increase EdTV viewing.[12]

3. METHOD

Recruitment of teachers and interviewing families. Twenty-two teachers from all ten Minneapolis public high schools volunteered to participate by responding to a form letter addressed to more than 60 teachers in the tenth-grade social studies program. One social studies class was selected randomly from classes taught by each participant; enrollment in these classes usually was between 25 and 30 students.

With one exception, students had not been systematically assigned to social studies classes according to ability or other criteria correlated with dependent variables. At one school, however, a special class had been formed from among the top 10% ability students, but the three participating teachers there drew their students from the remaining 90%.

Approximately 23 students in each class were chosen randomly to be interviewed. One parent per family was interviewed, as well, since part of the experimental design called for charting the flow of child-to-parent influence in media behavior.[13] Which parent was interviewed was determined by a quota system--based on interviewer selection--in which half the girls and half the boys were interviewed with their fathers, and the remainder with their mothers. As a result, parents included in the sample were those most likely to be home--a disadvantage in terms of sample bias, but an advantage in scheduling interviews for subsequent waves, since the same parents were interviewed throughout the study.

Exposure to EdTV and a variety of other variables were measured during three interview waves--immediately before experimental manipulations, immediately after the experiment, and again two months later. The broad outlines of the field research design can be visualized by referring to the chart below, which lists the

treatment conditions and their duration and the three interview periods. Interviewers were rotated between waves, so that no family was interviewed twice by the same individual.

1st Interview (January 21-27)	Exp. Treatments (February 4-25)	2nd Interview (March 4-10)	3rd Interview (May 6-12)
	1. Control classes		
	2. Discussion alone		
	3. Direct-mail alone		
	4. Discussion plus mail		

Briefly, the data-gathering strategy for each wave included separate child and adult questionnaires. Upon entering a respondent's home, the interviewer handed the designated child a self-administered questionnaire, and the youngster was sent to another room to complete it unaided while the parent was being interviewed.

During January, 510 families were interviewed; 93% were originally-designated cases, and the remainder were replacements from within appropriate classes. Ninety-one percent of these families were interviewed again during March following the experimental treatments.

The third interview wave (May) was intended to assess only the main hypotheses relating to EdTV viewing changes. Hence, a sub-sample of approximately 13 families per class was randomly drawn in order to limit costs and to enable us to employ only exceptional interviewers. Ninety-three percent of this sample assignment was completed.

Assignment of experimental units; analytical model. Three aims guided the assignment of classes to the four treatment combinations. First, it was necessary to avoid treatment contamination which would result if classes within the same school received different treatments.

Second, it seemed desirable to assign a disproportionate number of classes to the treatments that included class discussions, given the variability that might be introduced by differences in teachers' personalities and classroom performance.

Third, because of the limited number of experimental units (classes), we felt we should stratify schools on some factor correlated with the main dependent variable, exposure to educational television. The variable used was median adult education in each neighborhood served by the high schools.

The procedure, then, was as follows: The schools were stratified into high, middle, and low education groups; three schools were randomly assigned to each of the treatment combinations in which the discussion method figured, and two schools were similarly allocated to each of the non-discussion combinations.[14]

The analysis-of-variance model followed was the fixed-constants case of a two-factor factorial--the factors being mail advertising and the discussion method.[15]

Measuring exposure to EdTV. The measure of exposure to educational television was one developed in earlier research conducted by the principal investigator.[16] For adults, the series of questions asked: (1) whether the respondent had ever watched EdTV (Channel 2), (2) whether he had viewed evening programs, (3) how recently he had seen an offering, (4) what was the name of that program, or who was on it, or what it was about, and (5) how frequently per month the individual usually watched Channel 2. The children's questionnaire battery (self-administered) was similar, except that the frequency-per-month item was eliminated.[17]

Question four in the sequence, the recall criterion, was included to reduce prestige bias. Considerable care was exercised in analyzing experimental data

to make certain that programs mentioned were indeed broadcast during evening hours—from 6 p.m. on—and that respondents provided sufficient detail to support their viewing claims.[18]

A qualified viewer was one who claimed to have watched educational television and who could name a program or describe it in detail.

4. FINDINGS

The effects of these attempts to increase the EdTV audience can be estimated for both children and parents by examining differences in January-March and January-May exposure levels. The first test provides information concerning the immediate impact of experimental manipulations; the second test tells how persistent the changes in audience behavior were.

Table 1 presents the analysis of differences between children's EdTV exposure in January and in March and shows the percentage changes for the four treatment groups.[19]

It can be seen that the discussion (social reward) method was successful in increasing the number of qualified viewers among children.

In a period of four weeks, then, significant numbers of children were introduced (or re-introduced) to evening educational television via a series of public affairs broadcasts. It was important to ascertain, though, whether or not this behavioral change continued; this was the purpose of the interviews two months after the experimental treatments and approximately six weeks after "World Affairs" concluded its season.

The children's EdTV viewing at this later date was slightly greater than in March; the F-ratio for the discussion method was 6.88 ($p < .025$). However, this analysis is again based on percentage of "qualified" viewers. Considering the

Table 1

CHANGES IN PERCENTAGE OF "QUALIFIED VIEWERS" AMONG CHILDREN BETWEEN JANUARY AND MARCH

Source	d.f.	M.S.	F	P
Discussion	1	.5714	5.92	.05
Direct Mail	1	.0364	NS	
Disc. X Mail	1	.0002	NS	
Residual	18	.0965		
Total	21			

Mean Percentage Changes[20]

		Discussion: Absent	Discussion: Present
Direct Mail	Present	1% (4)	22% (9)
	Absent	0% (4)	15% (5)

general rarity of EdTV viewing in the population, it would not be surprising if some children who watched a program during February were able to recall enough of that program in May in order to qualify as a viewer. Thus, although children might remain viewers according to these measurement operations, they might not have viewed EdTV subsequent to the experimental period.

Accordingly, a second analysis of January-May exposure differences was performed employing the recency question. The item asked, "About when was the last time you saw a program during the evening hours--within the last week, within the last month, or longer than a month ago?" Use of this item resulted in defining four groups of children during each interview wave; the first three groups are qualified viewers (they could name a program), and the fourth group is made up of non-viewers. Table 2 shows the sample distribution during January, March, and May.

It can be seen that the apparent maintenance of gains in EdTV exposure until two months after the experiment is largely the result of children who recalled programs they had seen earlier than April. In May, 11% of the tenth-graders reported they had watched Channel 2 within the last month; before the experiment this figure was 10%.

In order to test whether program-selection influence on children diffused to their parents, adult Channel 2 viewing behavior was analyzed. Still employing classes as experimental units, percentage changes in qualified viewers among parents were computed and subjected to statistical examination. There were no significant gains in exposure between January and March or between January and May.

Parents' responses were studied more closely, though, to learn whether any increases in watching "World Affairs" could be noted. Before the experiment,

Table 2

RECENCY-OF-VIEWING AMONG CHILDREN

	January	March	May
Viewed within last week	1%	12%	3%
Viewed within last month	9	14	8
Viewed longer than month ago	13	12	30
Could not name program	77	62	59
	100%	100%	100%
N =	510	425	281

3 out of 510 adults mentioned the broadcast when asked to describe a recent offering they had watched; during the March interview, 32 out of 425 parents mentioned the program. Within each class, January-March percentage changes were obtained for numbers of parents who mentioned "World Affairs," and these data were analyzed in a manner similar to the findings for children. Table 3 presents the analysis of variance and mean percentage gains under the four treatment combinations.

Statistically significant changes were found for the experimental program, but this time the direct mail technique displayed the only main effect. The interpretation of this outcome must be tempered, however, in view of the statistically significant interaction between the discussion and direct-mail methods. It was the combination of promotional mail (which the parents must have read) and children's viewing of EdTV for class purposes that changed parents' Channel 2 viewing.[21]

Further data about children who changed their viewing behavior. The only children attracted to the EdTV audience were students in discussion classes. Initially, 25% were qualified viewers, but after the experiment in March, viewing had doubled to 49% of the sample.

Of particular interest are the children who were non-viewers in January (217 out of 291 in discussion classes). Many of these youngsters remained outside the EdTV audience through March, but 81 said they had viewed educational television during the interim and provided sufficient evidence to back their claims. Changes for the two sexes were essentially the same.

Whether these 217 tenth-graders joined the EdTV audience was highly correlated with estimates of the socio-economic status of their families. (Our status typology was based on the occupation and educational attainment of the chief wage earner. High status families were defined as those in the professional and

Table 3

CHANGES IN PERCENTAGE OF PARENTS BETWEEN JANUARY AND MARCH WHO MENTIONED "WORLD AFFAIRS" PROGRAM

Source	d.f.	M.S.	F	P
Discussion	1	.0418	NS	
Direct Mail	1	.1209	7.70	.025
Disc. X Mail	1	.1454	9.26	.01
Residual	18	.0157		
Total	21			

Mean Percentage Changes

		Discussion: Absent	Discussion: Present
Direct Mail	Present	3% (4)	14% (9)
	Absent	2% (4)	0% (5)

managerial group with at least some college education; medium status families derived their income from clerical, sales, or operative occupations and were characterized by at least 11 to 12 years of formal education; the heads of low status families worked as laborers or in service or household occupations and typically had completed 10 years or less of formal schooling.)

Table 4 shows that children in families with at least one college-educated parent were twice as likely to start watching Channel 2 as those in the lowest socio-economic status group.[22] This comes as no surprise to any student of TV program preferences. One expects to find more social reinforcement for reality-content viewing in families with parents likely to have intellectual interests and capabilities.

Table 4

SOCIO-ECONOMIC STATUS AND
CHANGES IN EdTV VIEWING

	Socio-Economic Status		
	Low	Medium	High
Remained non-viewers	71%	65%	40%
Joined EdTV audience	29	35	60
	100%	100%	100%
N =	63	119	35

In our study we had become interested in the work of Kohn, who has studied the relationship between class position and values relating to child rearing.[23] Here, a value is defined as a conception by parents of what is desirable in a child and as a factor influencing the choice of behavior designed to encourage that value. Kohn cast these values in the form of characteristics parents might think most important in their children.

Kohn interprets value choices as reflecting priorities in what parents perceive as problematic, as well as important—problematic, in that attainment of a value cannot be taken for granted, and important, in that attainment should not be assumed.

Many of these values exhibit marked social class differences in the degree to which they are desired. Kohn comments:

> Members of different social classes, by virtue of enjoying (or suffering) different conditions of life, come to see the world differently—to develop different conceptions of social reality, different aspirations and hopes and fears, different conceptions of the desirable.

Parents in the present study were confronted with a list of Kohn's desirable traits, among which were two of particular interest—"to be curious about things" and "to do well in school." Respondents were told:

> Here is a list of things that have been mentioned by parents as being desirable in boy (girls) of * *'s age. Of course, parents disagree on how desirable each of these things is. Some parents rate a thing as most desirable, while other parents believe it is only somewhat desirable.

Parents then were asked to pick the <u>three</u> most important traits from a list of nine. (Traits appeared in random order, and this order was changed from interviewer to interviewer.)

Among the parents we studied, about one-half thought that doing well in school was one of the most desirable qualities a tenth-grader should exhibit, while one-fifth of the parents accorded equal importance to being curious. No significant differences in ranking these attributes emerged for fathers or mothers, whether they were assessing qualities important in boys or girls—except that fathers were more likely to want their sons "to be curious about things."

The relative rankings of these attributes can be used to estimate parents' socialization emphasis with respect to the intellectual development of their children. Parents were classified according to the typological scheme below as to whether they rated each trait of first or less importance.

	Rank of Attribute	
Typological Label Applied to Parents:	"To do well in school"	"To be curious about things"
Child-centered	Less important	First choice
Parent-centered	First choice	Less important
High intellectual concern	First choice	First choice
Low intellectual concern	Less important	Less important

The labels represent evaluations of the meaning of parents' choices, as interpreted by Peter Clarke of the staff for the present project. He predicted that youngsters in "child-centered" families would be most attracted by the social rewards available in the experiment, and hence most likely to increase their EdTV viewing. It was predicted that children in "parent-centered" families would be least attracted by the social rewards.

This hypothesis was partially supported. Table 5 shows the relationship between the typology and Channel 2 viewing increases: changes in EdTV exposure were found equally among all groups of families except those with "parent-centered" adults.[24] Among these families only 26% of the children joined the EdTV audience between January and March. The possible barrier represented by this set of socialization values is given added weight by the fact that nearly half the families fell in this category.

The earlier prediction is in line with the theoretical framework outlined for main experimental hypotheses. For parents to value "being curious" more than "doing well in school" was interpreted as a sign of reward-emphasis in intellectual

Table 5

PARENTAL CHILD VALUES AND
CHILDREN'S EdTV EXPOSURE

	Child-centered	Parent-centered	High Intellectual concern	Low Intellectual concern
Remained non-viewers	56%	74%	56%	53%
Joined EdTV audience	44	26	44	47
	100%	100%	100%	100%
N =	25	96	18	77

growth. This set of socialization values contrasts against an emphasis on external, performance criteria (good grades), which suggests the possibility of parent-imposed behavior demands in order to succeed in the competitive school environment. However, as Table 5 shows, there are no differences between "child-centered" and high or low concern groups; in each, some 40% of the children changed their TV behavior.

As one would expect from Kohn's data, parental evaluations of the two desirable characteristics were related to socio-economic status--particularly to the household head's education. Families characterized by at least some college education were more likely to be "child-centered" or to express high intellectual concern. The reverse was true among low-education families; mothers and fathers were more parent-centered or lacked intellectual concern altogether ($p < .01$).

The relationship between education and child-rearing values explains Table 5 only partially. Level of intellectual concern was related to parents' education, but it was not predictive of changes in EdTV viewing. However, the directional focus of values (child- or parent-centered) was predictive to a degree.

Other findings suggest that the intellectual content of parent-child relationships may have been relatively unimportant when it came to increasing EdTV viewing under the "social reward" procedure used in our field of experiment. Two aspects of parental behavior and interests were thought to predispose their children toward the cognitive goals of educational television: (1) public affairs opinion leadership, and (2) how frequently parents discussed "events in the news" with their tenth-graders.

Parents were asked questions intended to determine whether they were public affairs opinion leaders.[25] However, children attracted to EdTV during February

were equally likely to come from opinion leader and non-leader families. Joining the EdTV audience also was unrelated to the frequency of parent-child interaction about news events.

On the other hand, children were more likely to join the EdTV audience if their parents also were qualified viewers. In families where at least one parent watched Channel 2, 54% of the tenth-graders were drawn into the audience; but among families in which the interviewed parent did not watch, only 26% of the youngsters started watching EdTV ($p < .001$). These data support an earlier finding by Schramm and his colleagues that "family influence makes really spectacular differences . . . in some of the fringe behavior such as viewing educational television."[26]

A closer look at the present data illustrates this point more fully. It will be recalled that youngsters were asked how recently and how frequently they talked with their parents about TV in general. Families were classified into groups with high and low amounts of reported interaction between tenth-graders and parents.

When families in which the interviewed parent viewed EdTV were examined separately from those in which the parent was a non-viewer, the relationship of parent-child interaction to EdTV viewing is clearly seen. Table 6 shows that interaction was positively correlated with changes in children's EdTV behavior among the viewer families, yet negatively correlated among the non-viewer families.[27]

The combined effects of parental EdTV exposure and social interaction about television are quite marked. Almost 7 out of 10 children who talked a great deal about TV with parents who watched Channel 2 began viewing the medium during February; however, this behavior change occurred in only 2 out of 10 cases among

Table 6

EXTENT OF TV INTERACTION, PARENTAL EdTV BEHAVIOR, AND CHANGES IN CHILDREN'S VIEWING OF CHANNEL 2

		Extent of TV Interaction with Parents	
Parents:	Children:	Low	High
Qualified viewers	Remained non-viewers	54%	32%
	Joined EdTV audience	46	68
		100%	100%
		(56)	(31)
Not qualified viewers	Remained non-viewers	58%	80%
	Joined EdTV audience	42	20
		100%	100%
		(38)	(90)

children who interacted frequently with parents who did not view EdTV. Of course, discussions about TV between children and non-viewing (EdTV) parents were focussed on programs competing with the EdTV channel.

5. DISCUSSION AND SUMMARY

In our field experiment, we allocated tenth-grade social studies teachers and their classes to four experimental conditions: (a) one in which a discussion procedure was used to stimulate viewing of a public affairs series on the area's educational television station, (b) another in which students received brochures through the mail, publicizing the programs, (c) a third condition combining both types of stimulus, and (d) a control situation involving neither stimulus. Dependent variables were the educational television viewing habits of children and their parents during evening hours. (We had hypothesized that the children might serve as agents of change within the family.)

The "social reward" or discussion method was successful in increasing the number of EdTV viewers among children, but the increase persisted only while the experiment was in progress. When the experimentally-induced rewards were withdrawn (after four weeks), youngsters reverted to their pre-February television habits; program interest did not generalize to other educational television broadcasts.

The children's behavior is understandable, given the lack of over-all EdTV viewing increases among parents. Contrary to expectations based on family viewing of other "reality" content on TV, parents and children did not watch "World Affairs" together. There was a small but statistically significant increase in parents' viewing of the experimental program, but this was in response to the combined effort of mailed publicity and the children's class experiences.

Perhaps parents thought "World Affairs" was for high school students and inappropriate for adult viewing. It seems possible that program recommendations from teachers could make a program too "educational" for its own good.

At the time of the field experiment, Peter Clarke, who directed it, noted that there were participating teachers who thought the program series turned out to be dull, and thus were pessimistic about their classroom efforts to encourage viewing. By the time this discovery was made, it was too late to substitute a different program.

Teacher ability, of course, is an important unanalyzed variable in this experiment. Whether or not the social-reward method has practical utility remains unknown for situations involving teachers unlike those who were willing to participate in this study. It seems safe to suspect that volunteering to take part in research is correlated with a broad range of personality and career-involvement attributes.

The findings from this experiment nevertheless form a pattern. Children who responded to the experience at school were those most likely to receive additional reinforcement at home. For example, youngsters who joined the EdTV audience were, predominantly, members of high socio-economic families or had parents who viewed educational television. And, among EdTV families, the frequency of parental social rewards for television viewing in general was positively correlated with the probability that children would be encouraged to watch "World Affairs."

Lastly, children's viewing behavior was related to their parents' priorities in child-rearing values. Youngsters whose parents placed more importance on "doing well in school" than on "being curious about things" were less likely to respond to social rewards at school and watch EdTV.

In further research, we would hope to control some of the variables not susceptible to experimental manipulation or control in the field experiment already completed. In particular, it would be helpful to have access to a variety of high-quality "reality" content from both educational and commercial broadcasting sources. Furthermore, we would seek ways in which to provide more direct social rewards to parents for viewing with their children.

Notes

1. Recent and comprehensive studies of the EdTV audience are found in Wilbur Schramm, Jack Lyle, and Ithiel Pool, The People Look at Educational Television, Stanford, Stanford University Press, 1963. See also, Wilbur Schramm (editor), The Impact of Educational Television, Urbana, University of Illinois Press, 1960; and Roy E. Carter, Jr. and Verling C. Troldahl, "The Size and Composition of the Adult Evening Audience for Educational Television in the Twin Cities," Report No. 3, Studies of the Adult Evening Audience for Educational Television in the Twin Cities, Minneapolis, Communication Research Division, School of Journalism, University of Minnesota, 1961.

2. Philip E. Converse, "Information Flow and the Stability of Partisan Attitudes," Public Opinion Quarterly, Vol. 26 (1962), pp. 578-599.

3. See Herbert Hyman, Political Socialization, Glencoe, Free Press, 1959.

4. Wilbur Schramm, Jack Lyle, and Edwin B. Parker, Television in the Lives of Our Children, Stanford, Stanford University Press, 1961, Ch. 3 and Appendix VII.

5. Peter Clarke of the project staff for the present study investigated the structure of attitudes toward newspapers in the case of ninth-grade children. At this age level, beliefs about what newspapers were like had attained almost an adult structure, which suggests that tenth-graders may already be equipped with many attitudinal predispositions for later media behavior. Peter Clarke, The Factor Structure of Children's Attitudes Toward Newspapers: A Preliminary Investigation, Minneapolis, Communication Research Division, School of Journalism, University of Minnesota, 1961.

6. Wilbur Schramm, "The Nature of News," Journalism Quarterly, Vol. 26 (1949), pp. 259-269.

7. "World Affairs" was a locally-produced panel show broadcast Monday evenings at 9:30 (opposite "Ben Casey"!). The format was that of a newsman-moderator plus two or three guest specialists discussing a different topic each week. During the final 10 minutes a high school student usually joined the group to ask questions.

8. The label, "reality" content, has been adopted from Schramm, Lyle, and Parker, op. cit., pp. 63-64. These researchers distinguish between reality and fantasy content by suggesting that the former usually refers the viewers to problems of the real world, requires effort, works chiefly through realistic materials, and offers enlightenment. On the other hand, fantasy programs are said to invite surrender and passivity, play on emotions, attract interest by abrogating the rules of the real world, and offer pleasure through wish fulfillment and anxiety reduction. In the present study "reality" content included public affairs programs, news, serious drama, and "informative" offerings for children.

9. Chi-square equals 30.9, 1 d.f.; $p < .001$. Parallel findings were yielded by a small-scale media study among tenth-graders conducted a year prior to the field experiment. A sample of 214 Minneapolis children completed self-administered questionnaires at school in which they were asked about the social context characterizing viewing of the last evening TV program they remembered. Youngsters who mentioned reality content were almost twice as likely as others to have talked about these programs.

10. Chi-square for net difference exceeds the .001 level.

11. Tenth-grade children (mostly 15-year-olds) and their parents were studied in this audience-increase experiment because evening EdTV content about public affairs could easily be made relevant to activities in the social studies classes at that level.

12. An audience-increase experiment using direct-mail stimuli has been reported by Goldstein and his colleagues. They achieved significant viewing increases, but the effect was due partly to a decline in exposure among control subjects. See M.N. Goldstein and J.R. Shepherd, An Experiment in Increasing the Audience for Educational Television, Preliminary Report No. 5, Eugene, Institute for Community Studies, 1963. In a much different vein, Parker has examined changes in EdTV viewing by employing the principle of stimulus generalization. See Edwin B. Parker, Increasing the Audience for Educational Television, Urbana, Institute of Communications Research, 1960.

13. Experience gained during pre-tests suggested that pressures arising from execution of experimental treatments would make it impractical to interview both parents. It was stipulated to interviewers that both the child and his parent had to be questioned at the same time. A child's responses were never shown to his parent.

14. Although this assignment of experimental units actually represents a cluster design (in which the school technically is the experimental unit), analyses were performed under the assumption there was no clustering effect correlated with the dependent variable. Experimental results demonstrated that this assumption was tenable.

15. Actually, the groups-within-treatments design described by Lindquist is the most applicable here. However, since nearly equal numbers of students were interviewed within each class, this design simplifies to a common factorial arrangement. See E.F. Lindquist, Design and Analysis of Experiments in Psychology and Education, Boston, Houghton Mifflin, 1953, Ch. 7. Since variable numbers of classes were assigned to the treatment combinations, the computing scheme has been drawn from Helen M. Walker and Joseph Lev, Statistical Inference, New York, Henry Holt, 1953, pp. 381-382.

16. Roy E. Carter, Jr. and Verling C. Troldahl, "Use of a Recall Criterion in Measuring the Educational Television Audience," Public Opinion Quarterly, Vol. 26 (1962), pp. 114-121.

17. These EdTV questions were "buried" in the middle of a rather long questionnaire dealing with mass media habits in general and including items assessing a variety of family variables. The study was described to respondents as one concerned with "what adults and children like to read in newspapers and watch on television."

18. Vague mentions, such as "world events," "sports," "some sort of art," and the like did not qualify respondents as viewers. In these examples, the individual would have had to specify the world events under discussion, the kind of sports instruction presented, or the period of art or medium dealt with in order to be classified as an EdTV viewer.

19. ANOVA'S for both children and parents were computed employing the 21 degrees of freedom afforded by the 22 social studies classes. Changes between interview waves in percentage of qualified viewers in each class have been normalized by arc-sine transformations. See Wilfrid J. Dixon and Frank J. Massey, Jr., Introduction to Statistical Analysis, New York, McGraw-Hill, 1957, p. 183.

20. Figures in parentheses are treatment-group Ns.

21. It should be emphasized that changes among the adults involved a small number of individuals. Furthermore, 14 of the 32 parents who in March reported having seen "World Affairs" already were in the EdTV audience. The findings for parents reflect, then, a reallocation of viewers among educational television programs plus a small increase in the EdTV audience.

22. Chi-square equals 10.4, 2 d.f.; $p < .01$. One benefit of higher disposable income was not associated with EdTV viewing changes, though. Whether a family owned one vs. two or more TV sets was uncorrelated with the tenth-grader's decision to watch or not watch Channel 2.

23. See Melvin L. Kohn, "Social Class and Parental Values," American Journal of Sociology, Vol. 64 (1959), pp. 337-351; and "Social Class and Parent-Child Relationships: An Interpretation," American Journal of Sociology, Vol. 68 (1963), pp. 471-480.

24. Chi-square equals 9.9, 3 d.f.; $p < .02$.

25. Items were drawn from Elihu Katz and Paul F. Lazarsfeld, Personal Influence, Glencoe, Free Press, 1955. See also, Roy E. Carter, Jr. and Peter Clarke, "Public Affairs Opinion Leadership Among Educational Television Viewers," American Sociological Review, Vol. 27 (1962), pp. 792-799.

26. Schramm, Lyle, and Parker, op. cit., pp. 47-49.

27. Chi-square for qualified viewer families (parents) equals 3.6, 1 d.f.; $p < .10$. Chi-square for non-viewer families equals 6.7, 1 d.f.; $p < .01$. Although the first test did not reach the .05 level, the interaction (statistical) between parental behavior and extent of discussion about TV is significant. Parents were classified as qualified viewers if they satisfied exposure criteria in January or in March.

APPENDIX I

Measures of EdTV Viewing

Here are some more questions about watching television--this time about watching Channel 2, the educational television station in the Twin Cities.

Have you ever watched any TV programs on Channel 2?

1___no 2___yes

IF YES, ASK:

IF NO, SKIP TO ** ON PAGE 5.

Were any of the programs you saw ones that were on during the <u>evening</u> hours--that is, from 6 o'clock on?

1___yes
2___not sure
3___no

IF NO OR NOT SURE, SKIP TO ** ON PAGE 5.

About when was the last time you saw one of these evening programs on Channel 2, the educational TV station?

1___today or yesterday
2___1 week or less
3___2 weeks or less
4___1 month or less
5___2 months or less
6___6 months or less
7___more than 6 months ago

Can you tell me the name of some Channel 2 programs you've seen recently during the evening . . . or just tell me what the program was about?

_____

_____

PROBE: Can you remember the names of any other evening Channel 2 programs you've seen . . . or what they were about?

_____

_____

About how many evening programs on Channel 2 do you watch during the average month?

_____

The Carter-Troldahl audience study (footnote 1) sought respondents among a general-population probability sample of Twin Cities area telephone households (Minneapolis, St. Paul, and contiguous suburbs). They found 20.9% to be qualified viewers (in December, 1960). The sample of adults for the present field experiment was limited to Minneapolis parents of tenth-grade children, and the January interviews identified 28.4% as qualified viewers. This difference of 7.5% may have reflected either an audience increase during the intervening 25 months or the educational status of families with children in high school.

The adult EdTV exposure items had to be modified somewhat for use in self-administered questionnaires for children. The principal changes were simplifying the recency-of-viewing question to three response categories and eliminating the frequency item altogether. The question battery is shown below.

Again, these questions were constant across all three interview waves, except that the additional recall probe was not asked during January. This first wave identified 22.9% of the children as qualified viewers.

Here are some more questions about watching television--this time about watching Channel 2, the educational television station in the Twin Cities.

Have you ever seen any programs on Channel 2 during the <u>evening</u> hours--that is, from 6 o'clock on?

____yes	____no
IF YES, PLEASE ANSWER THESE QUESTIONS.	IF NO, PLEASE GO TO THE NEXT PAGE.

About when was the last time you saw a program during the <u>evening</u> hours?

____within last week
____within last month
____longer than a month ago

Try to remember one of the last Channel 2 programs you saw during the evening. What was the program about . . . and who was on it?

_____

_____

Can you remember the names of any <u>other</u> Channel 2 programs you've seen during the evening . . . or what they were about?

_____

_____

APPENDIX II

Information Supplied to Participating Teachers

UNIVERSITY OF MINNESOTA
Minneapolis 14, Minn.

January, 1963

I enjoyed meeting you the other day and discussing the Twin Cities Educational Television Project with you. Since our chat was necessarily brief, I thought you might appreciate a note outlining the main points of the study.

First, the research is in the form of a field experiment in which two methods are being tested for their effectiveness in increasing EdTV viewing among tenth-grade children and their families. These methods are: (1) current events discussions at school that are coordinated with the content of evening EdTV programs, and (2) a small-scale direct mail advertising campaign promoting specific current events programs on Channel 2.

You are one of more than 20 teachers in Minneapolis high schools who are participating in this study. Each teacher will be assigned randomly to one of four experimental groups, which are based on the two methods described above. These four groups might be diagrammed in the following way:

		Discussion of Current Events Topics in Class	
		Absent	Present
Direct Mail Advertising	Present	1	2
	Absent	3	4

For example, teachers in the first group (1, above) will not conduct special discussions of the EdTV current events programs featured in this study, but the children in their classes will receive a brochure through the mail at home. Teachers randomly assigned to groups 2 and 4 will conduct special discussions, and the students taught by teachers in group 2 also will receive the mail advertising.

Group 3 is the "control" group. Neither the discussion nor the mail advertising method will be tested here; however, information gathered from students of teachers in group 3 will help gauge the effectiveness of methods used in groups 1, 2, and 4.

Of course, as in most experiments, it is important that your students <u>not be told</u> that they are part of a research project. This is an important point, whether or not your class is one of those testing the discussion method.

All information concerning the effects of the two methods will be gathered in home interviews conducted with a random sample of students in each class. Parents will be interviewed as well. Students should be given no reason to suspect that there is any connection between the interview and either the class discussions or the mail advertising. If students and their families were aware of being subjects of research on educational television, this could seriously bias the findings.

As it stands now, the most likely period during which the current events broadcasts and the classroom discussions will be conducted is February, 1963. If you are one of the "discussion" teachers, you will be asked to spend a class period on each of four Mondays discussing the current events topic to be featured on Channel 2 that evening. The next day you will be asked to follow up by asking students for their ideas about the topic. Educational materials that students may take home and keep will be provided each of the four weeks, and these materials will be delivered to you several days prior to their use.

As you can see, a study of this type could not be conducted without help from teachers. Your assistance and cooperation are very much appreciated, and we hope this research will suggest ways in which EdTV can be made more useful for classroom teachers.

Best wishes,

Peter Clarke
Project Director